

## ABSTRACT

Disclosed is a method for identifying substances that alter the interaction of a presenilin protein with a presenilin-binding protein, including contacting at least the interacting domain of a presenilin protein to a presenilin-binding protein in the presence of a test substance, and measuring the interaction of the presenilin protein and the presenilin-binding protein. Also disclosed is method for identifying substances that modulate the nuclear translocation of an *armadillo* protein, including providing a culture of cells that express the *armadillo* protein and a mutant presenilin protein, or a functional fragment thereof that binds an *armadillo* protein; contacting the culture with a test substance; inducing nuclear translocation of the *armadillo* protein in the cells; and measuring levels of nuclear *armadillo* protein as compared to a control as an indication of modulatory activity of the test substance. Further disclosed is method for screening individuals for presenilin alleles associated with Alzheimer's Disease or related disorders, including obtaining cells from an individual to be tested for Alzheimer's Disease or a related disorder; inducing nuclear translocation of an *armadillo* protein in the cells; and measuring levels of the nuclear *armadillo* protein as compared to a control as an indication of the presence or absence of presenilin alleles associated with Alzheimer's Disease or a related disorder.

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